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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/754,535	01/12/2004	Takeshi Chujoh	247444US-2SRD CONT	8256
22850 7590 02/22/2008 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER SENI, BEHROOZ M	
			ART UNIT 2621	PAPER NUMBER
			NOTIFICATION DATE 02/22/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	Application No. 10/754,535	Applicant(s) CHUJOH ET AL.	
	Examiner Behrooz Senfi	Art Unit 2621	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,5-7,19 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,5-7,19 and 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/12/2004, 2/13/04, 10/25/04, 7/12/05,</u>                    | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

2. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

3. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1, 5 – 7, 19, 23 - 26 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 – 3, 5 – 9 of copending Application No. 11/687,923. Although the conflicting claims are not identical in terms of wording and terminology, they are not patentably distinct from each other because claims 1, 5 – 7, 19, 23 - 26 of instant application is broader than the claims 1 – 3, 5 – 9 of copending Application No. 11/687,923. It is noted that, claim 1 of the copending application 11/687,923 recites, a video encoding method of subjecting an input video signal

having a luminance signal and two color difference signals to motion compensation predictive encoding by using a reference picture signal and a motion vector between the input video signal and the reference picture signal (please see, claim 1, lines 1 – 6 of copending application 11/687,923), thus corresponds to claim 1, lines 1 – 5 of the instant application, comprising:

selecting one combination, for each to-be-encoded block of the input video signal, from a plurality of combinations each including at least one reference picture number determined in advance for the reference picture and prepared for each of the luminance signal and the two color difference signals (please see, claim 1, lines 7 – 11 and 13 - 14 of copending application 11/687,923), thus corresponds to claim 1, lines 6 – 9 of the instant application,

generating a prediction picture signal in accordance with the reference picture number and predictive parameter of the selected combination (please see, claim 1, lines 15 – 17 of copending application 11/687,923), thus corresponds to claim 1, lines 10 – 11 of the instant application,

generating a predictive error signal representing an error between the input video signal and the prediction picture signal (please see, claim 1, lines 24 - 26 of copending application 11/687,923), thus corresponds to claim 1, lines 12 – 13 of the instant application,

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encoding the predictive error signal, information of the motion vector, and index information indicating the selected combination (please see, claim 1, lines 27 - 29 of copending application 11/687,923), thus corresponds to claim 1, lines 14 – 15 of the instant application.

Claim 1 of the instant application does not recite, containing a weighting factor and offset information, the generating the prediction picture signal including calculating a linear sum of the reference picture signal indicated by the reference picture number included in the selected combination, according to the weighting factor, and adding the offset to the linear sum, as specifies in claim 1 of the copending application 11/687,923.

In view of the above, it is noted that claim 1 of the instant application is broader than the corresponding claim 1 of copending Application No. 11/687,923.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

It is noted that, claim 2 of the copending application 11/687,923 recites, the video encoding method according to claim 1, wherein the input video signal is a picture signal input for each frame of a progressive signal or a picture signal input for each frame obtained by merging two fields of an interlaced signal, and the reference picture signal is a picture signal on a frame basis (please see, claim 2, lines 1 – 6 of copending application 11/687,923), thus corresponds to claim 5, lines 1 – 4 of the instant application.

It is noted that, claim 3 of the copending application 11/687,923 recites, the video encoding method according to claim 1, wherein the input video signal is a picture signal input for each field of an interlaced signal, and the reference picture signal is a picture signal on a field basis (please see, claim 3, lines 1 – 5 of copending application 11/687,923), thus corresponds to claim 6, lines 1 – 3 of the instant application.

It is noted that, claim 4 of the copending application 11/687,923 recites, the video encoding method according to claim 1, wherein the input video signal is a signal including (a) a picture signal input for each frame of a progressive signal, (b) a picture signal input for each frame obtained by merging two fields of an interlaced signal, and (c) a picture signal input for each field of an interlaced signal, the reference picture signal is a picture signal on a frame basis when the input video signal is the picture signal input for each frame, and the reference picture signal is a picture signal on a field basis when the input video signal is the picture signal input for each field (please see, claim 1, lines 1 – 12 of copending application 11/687,923), thus corresponds to claim 7, lines 1 – 7 of the instant application.

It is noted that, claim 5 of the copending application 11/687,923 recites, a video encoding method of subjecting an input video signal having a luminance signal and two color difference signals to motion compensation predictive encoding by using a reference picture signal and a motion vector between the input video signal and the reference picture signal (please see, claim 5, lines 1 – 6 of copending application 11/687,923), thus corresponds to claim 19, lines 1 – 4 of the instant application, comprising:

a selecting unit configured to select one combination, for each to-be-encoded block of the input video signal, from a plurality of combinations each including at least one reference picture number determined in advance for the reference picture and prepared for each of the luminance signal and the two color difference signals (please see, claim 5, lines 7 – 11 and 13 - 14 of

copending application 11/687,923), thus corresponds to claim 19, lines 5 – 8 of the instant application,

a generating unit configured to generate a prediction picture signal in accordance with the reference picture number and predictive parameter of the selected combination (please see, claim 5, lines 15 – 18 of copending application 11/687,923), thus corresponds to claim 19, lines 9 – 11 of the instant application,

a generating unit configured to generate a predictive error signal representing an error between the input video signal and the prediction picture signal (please see, claim 5, lines 24 - 27 of copending application 11/687,923), thus corresponds to claim 19, lines 12 – 13 of the instant application,

an encoding unit configured to encode the predictive error signal, information of the motion vector, and index information indicating the selected combination (please see, claim 5, lines 28 - 31 of copending application 11/687,923), thus corresponds to claim 19, lines 14 – 15 of the instant application.

Claim 19 of the instant application does not recite, containing a weighting factor and offset information, the generating the prediction picture signal including calculating a linear sum of the reference picture signal indicated by the reference picture number included in the selected combination, according to the weighting factor, and adding the offset to the linear sum, as specifies in claim 5 of the copending application 11/687,923.

In view of the above, it is noted that claim 19 of the instant application is broader than the corresponding claim 5 of copending Application No. 11/687,923.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

It is noted that, the limitations in claims 23 and 25 of the instant application, corresponds to the limitations in claim 8 of copending Application No. 11/687,923.

It is noted that, the limitations in claim 24 of the instant application, corresponds to the limitations in claim 7 of copending Application No. 11/687,923.

It is noted that, claim 9 of the copending application 11/687,923 recites, a computer readable storage medium storing instructions of a computer program which when executed by a computer results in performance of steps (please see, claim 9, lines 1 – 3 of copending application 11/687,923), thus corresponds to claim 26, lines 1 – 2 of the instant application, comprising;

selecting one combination, for each to-be-encoded block of the input video signal, from a plurality of combinations each including at least one reference picture number determined in advance for the reference picture and prepared for each of the luminance signal and the two color difference signals (please see, claim 9, lines 5 – 10 and 12 - 13 of copending application 11/687,923), thus corresponds to claim 26, lines 4 – 7 of the instant application,

generating a prediction picture signal in accordance with the reference picture number and predictive parameter of the selected combination (please see, claim 9, lines 14 – 16 of copending application 11/687,923), thus corresponds to claim 26, lines 8 - 9 of the instant application,



generating a predictive error signal representing an error between the input video signal and the prediction picture signal (please see, claim 9, lines 23 - 25 of copending application 11/687,923), thus corresponds to claim 26, lines 10 - 11 of the instant application,

encoding the predictive error signal, information of the motion vector, and index information indicating the selected combination (please see, claim 9, lines 26 - 29 of copending application 11/687,923), thus corresponds to claim 26, lines 12 - 14 of the instant application.

Claim 26 of the instant application does not recite, containing a weighting factor and offset information, the generating the prediction picture signal including calculating a linear sum of the reference picture signal indicated by the reference picture number included in the selected combination, according to the weighting factor, and adding the offset to the linear sum, as specifies in claim 9 of the copending application 11/687,923.

In view of the above, it is noted that claim 1 of the instant application is broader than the corresponding claim 9 of copending Application No. 11/687,923.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 1, 5 - 7, 19, 23 - 26 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 - 9 of copending Application No. 11/688,009.

Although the conflicting claims are not identical in terms of wording and terminology, they are not patentably distinct from each other because claims 1, 5

– 7, 19, 23 - 26 of instant application is broader than the claims 1 – 9 of copending Application No. 11/688,009. It is noted that, claim 1 of the copending application 11/688,009 recites, a video encoding method of subjecting an input video signal to motion compensation predictive encoding by using a reference picture for an input video signal having a luminance signal and two color difference signals and a motion vector between the input video signal and the reference picture (please see, claim 1, lines 1 – 6 of copending application 11/688,009), thus corresponds to claim 1, lines 1 – 5 of the instant application, comprising:

selecting one combination, for each block of the input video signal, from a plurality of combinations of predictive parameters prepared in advance for each of the luminance signal and the two color difference signals (please see, claim 1, lines 7 – 11 of copending application 11/688,009), thus corresponds to claim 1, lines 6 – 9 of the instant application,

generating a prediction picture signal in accordance with at least one designated reference picture number and the predictive parameter of the selected combination (please see, claim 1, lines 12 – 14 of copending application 11/688,0093), thus corresponds to claim 1, lines 10 – 11 of the instant application,

generating a predictive error signal representing an error between the input video signal and the prediction picture signal (please see, claim 1, lines 20 - 22 of copending application 11/688,009), thus corresponds to claim 1, lines 12 – 13 of the instant application,

encoding the predictive error signal, information of the motion vector, and index information indicating the selected combination (please see, claim 1, lines 23 - 25 of copending application 11/688,009), thus corresponds to claim 1, lines 14 – 15 of the instant application.

Claim 1 of the instant application does not recite, including a weighting factor and offset information, the generating the prediction picture signal including calculating a linear sum of the reference picture signal indicated by the designated reference picture number according to the weighting factor, and adding the offset to the linear sum, as specifies in claim 1 of the copending application 11/688,009.

In view of the above, it is noted that claim 1 of the instant application is broader than the corresponding claim 1 of copending Application No. 11/688,009.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Similarly the limitations claimed in claims 5 – 7, 19, 23 – 26 of the instant application corresponds to the limitations claimed in claims 2 – 9 of the copending Application No. 11/688,009.

6. Similarly, claims 1, 5 – 7, 19, 23 - 26 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 – 9 of copending Application No. 11/687,956.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (US 6,018,366) in view of Kokado Koichi et al. (moving image coding method, decoding method, encoding device, decoding device and recording medium storing moving image coding and decoding program).

Regarding claim 1, Asai discloses, a video encoding method of subjecting an input video signal (i.e., fig. 1, video signal encoding), having a luminance signal and two color difference signals (i.e., fig. 2, showing luminance signal (i.e., Y signal) and Cb, Cr signals) to motion compensation prediction encoding (i.e., fig. 8, MC unit 19) by using a reference picture signal representing at least one reference picture (i.e., fig. 8, frame memory 18 and MC 19, col. 8, lines 19 – 21) and a motion vector between the input video signal and the reference picture signal (i.e., fig. 8, MC 19) comprising, selecting one combination, for each block of the input video signal, from a plurality of combinations (i.e., figs. 1 – 3, shows selecting one combination) each including a predictive parameter prepared for each of the luminance signal and the two color difference signals (i.e., figs. 2 – 3 and 8, col. 7 – lines 36 – col. 8, lines 16) and generating a predictive picture signal in accordance with the reference picture and predictive parameter of the selected combination (i.e., fig. 8, 125 is a predictive picture signal in accordance with the reference picture and predictive parameter), generating a prediction error signal representing an error between the input video signal and the

prediction picture signal (i.e., fig. 8, 117), and encoding the predictive error signal, information of the motion vector, and index information indicating the selected combination (i.e., fig. 8, shows encoding circuit for encoding predictive error signal, information of the motion vector, and index information indicating the selected combination, e.g., luminance and chrominance sorter, consider as index information):

Asai is silent in regards to explicit of, at least one reference picture number determined in advance for the reference picture.

Kokado teaches a moving image coding using at least one reference picture number determined in advance for the reference picture (i.e., page 1, solution, page 2, paragraph 0008)

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teaching of Asai and Kokado, as a whole, to generate a predictive image with high prediction efficiency in a moving image coding method, as suggested by Kokado (i.e., page 1, problem to be solved).

Regarding claim 19, the limitations claimed are substantially similar to claim 1 above, thus have been analyzed and rejected with respect to the above claim.

Regarding claim 26, the limitations claimed are computer implemented program/software to execute the method of claim 1, since the disclosure of combination of Asai and Kokado is computer implemented; therefore the ground for rejecting claim 1 also applies here.

9. Claims 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asai et al. (US 6,018,366) in view of Kokado Koichi et al. and further in view of Goertzen (US 6,289,132).

Regarding claim 5, the combination of Asai and Kokado is silent in regards to explicit of, progressive signal or a picture signal input for each frame obtained by merging two fields of an interlaced signal.

Goertzen (i.e., fig. 3, col. 6, lines 1 – 53) teaches, picture signal input for each frame obtained by merging two fields of an interlaced signal.

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to combine the teaching of Asai, Kokado and Goertzen, as a whole, to optimize compression of motion images having frames with interlaced first and second fields which avoids the inefficiencies and inadequacies of block based approaches, as suggested by Goertzen (i.e., col. 2, lines 7 – 12).

Regarding claim 6, the combination of Asai, Kokado and Goertzen teaches, wherein the input signal is a picture signal input for each field of an interlaced signal, and the reference picture signal is a picture signal on a field basis (Goertzen, col. 6, lines 22 – 32).

Regarding claim 7, the combination of Asai, Kokado and Goertzen teaches, wherein the input video signal is a signal including a picture signal input for each frame of a progressive signal (Goertzen, col. 3, lines 6 – 16), a picture signal input for each frame obtained by merging two fields of an interlaced signal (Goertzen, col. 6, lines 40 – 45) and a picture signal input for each field of an

interlaced signal (Goertzen, col. 6, lines 22 – 26) the reference picture signal is a picture signal on a frame basis when the input video signal is the picture signal input for each frame, and the reference picture signal is a picture signal on a field basis when the input video signal is the picture signal input for each field (Goertzen, col. 6, lines 22 – 53).

Regarding claims 23, the limitations claimed are substantially similar to claim 5 above, thus have been analyzed and rejected with respect to the above claim.

Regarding claims 24 - 25, the limitations claimed are substantially similar to claims 6 - 7 above, thus have been analyzed and rejected with respect to the above claims.

### ***Contact***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Behrooz Senfi whose telephone number is 571-272-7339.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehrdad Dastouri can be reached on 571-272-7418.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through

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Behrooz Senfi  
Examiner  
Art Unit 2621

